COMPUTER-BASED ASSESSMENT OF DIGITAL INFORMATION RETRIEVAL

Ágota Tongori
Doctoral School of Education, University of Szeged

Keywords: information-retrieval; computer-based assessment; ICT literacy

21st century employment, productivity and prosperity are highly based on citizens` ICT literacy. No sustainable, smart and inclusive economy will exist without the borderless reach of digital technologies (European Commission, 2010), for which digital literacy is imperative. Questions on how education could provide instruction efficiently in the field have arisen and the latest assessment designs to find an answer have focussed on purpose-built (simulation) software as an authentic means (IEA, 2013).

This presentation aims to centre on measuring one aspect of ICT literacy, accessing information, in both international and national contexts through introducing the latest examples of computer-based assessment of information retrieval administered by major research institutions, and through introducing a new measurement instrument devised in a national context. With all the instruments having a basically identical conceptual framework, accessing information (as one aspect besides identifying, finding, storing, evaluating, creating and sharing information) is comparable.

Recent studies (ACARA, 2012; IEA, 2013; NAEP, 2013) on online ICT literacy assessment instruments having international contexts have been chosen from online databases to be compared with the one devised in Hungary with an openness to absorb the proven benefits of its antecedents. The studies focus on simulation-type computer-based ICT literacy assessment of students in grades 4 to 12 with the notion that the cognitive skills of problem solving and critical thinking are involved.

The present paper discusses three large scale assessments and a pilot one. One of the large scale tests has already been administered (ACARA, 2012), the others are in progress. The pilot tested (N=60) grade 5 and 10 Hungarian students with tasks delivered through the eDia online platform (20 tasks, 30 items; from simple multiple choice to complex, simulated website search; duration: 45 minutes). The Rasch model was used for scaling the data.

The comparison of the assessment methods of information retrieval is expected to lead to a reliable and authentic tool to measure this aspect of ICT literacy. The pilot test devised in Hungary is assumed to serve as a firm basis of an assessment instrument to be developed in the near future, to gauge students' confidence in accessing information in digital environments. In addition, the analysis of the results of the different grades could reveal the developmental trends in the given aspect of ICT literacy with presumably small differences in routine information seeking tasks.

By identifying the developmental characteristics of the grades, an effective means of assessment could be developed to enable large scale measurement and improvement. Applying the new Hungarian ICT literacy performance assessment instrument could be beneficial in terms of setting further developmental goals related to digital literacy.

This research was supported by the European Union and the State of Hungary, co-financed by the European Social Fund in the framework of TÁMOP 3.1.9-11/1-2012-0001 'Developing Diagnostic Assessments' project.